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## **ABSTRACT**

A diamond foam article comprises diamond deposited material on a substrate having an open contiguous structure at least partially filled with a filler material.

Methods for forming a diamond foam article comprise providing a foam substrate; preparing the foam substrate for diamond deposition; depositing diamond material on the foam substrate by one of several diamond deposition methods; and at least partially filling the diamond foam article with a filler material. Diamond foam articles are bonded to other components.